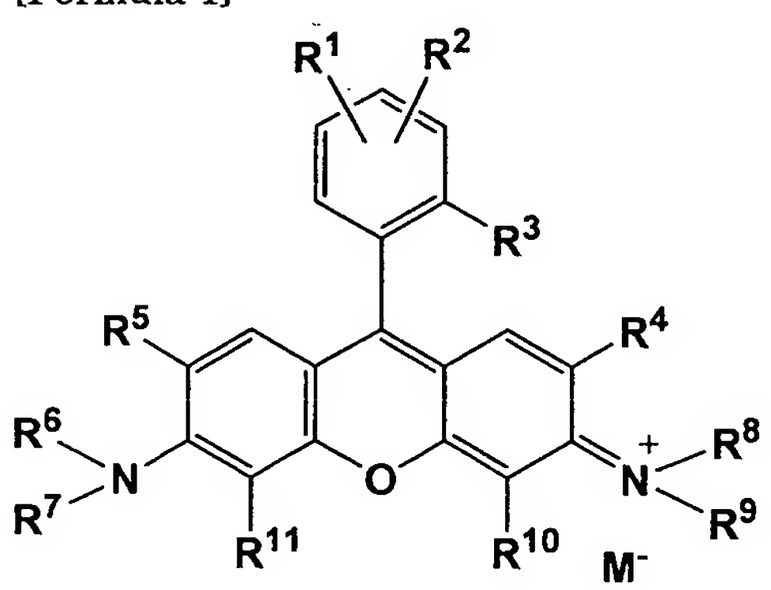
## Claims

[1] A fluorescent probe which is represented by the following formula (I):

[Formula 1]



(I)

wherein $R^1$ and $R^2$ each independently represent hydrogen atom, or a substituent for trapping proton, a metal ion, or an active oxygen species, provided that $R^1$ and $R^2$ do not simultaneously represent hydrogen atom, or $R^1$ and $R^2$ may combine to each other to form a ring structure for trapping proton, a metal ion, or an active oxygen species; $R^3$ represents a monovalent substituent other than hydrogen atom, carboxy group, or sulfo group; $R^4$ and $R^5$ each independently represent hydrogen atom, a halogen atom, or an alkyl group which may have or a substituent; $R^6$, $R^7$, $R^8$, and $R^9$ each independently represent an alkyl group which may have a substituent; $R^{10}$ and $R^{11}$ each independently represent hydrogen atom, a halogen atom, or an alkyl group which may have a substituent; in one or more combinations selected from the group consisting of combinations of $R^4$ and $R^8$, $R^9$ and $R^{10}$, $R^5$ and $R^6$, and $R^7$ and $R^{11}$, two of the groups included in each combination (wherein these groups are alkyl groups which may have a substituent) may combine to each other to form a 5- or 6-membered ring; and $M^-$ represents a counter ion; provided that combination of $R^1$, $R^2$, and $R^3$

(1) imparts a substantially high electron density to the benzene ring to which they bond so that the compound represented by the formula (I) can be substantially non-fluorescent before trapping proton, a metal ion, or an active oxygen species, and

(2) substantially reduces electron density of the benzene ring to which they bond so that the compound derived from the compound represented by the formula (I) after trapping proton, a metal ion, or an active oxygen species can be highly fluorescent after the trapping.

[2] The fluorescent probe according to claim 1, wherein the benzene ring on which $R^1$, $R^2$, and $R^3$ substitute has an oxidation potential less than 1.20 V before trapping proton, a metal ion, or an active oxygen species, and an oxidation potential not less than 1.40 V

after trapping proton, a metal ion, or an active oxygen species.

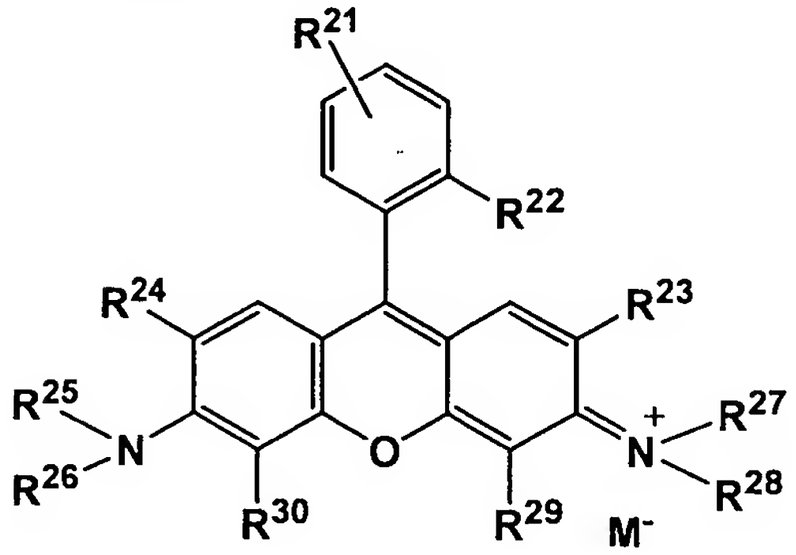
[3] The fluorescent probe according to claim 1 or 2, wherein $R^3$ is a lower alkyl group, or a lower alkoxy group.

[4] The fluorescent probe according to any one of claims 1 to 3, wherein the metal ion is an alkali metal ion, calcium ion, magnesium ion, or zinc ion.

[5] The fluorescent probe according to any one of claims 1 to 3, wherein the active oxygen species is selected from the group consisting of nitric oxide, hydroxyl radical, singlet oxygen, and superoxide.

[6] A compound represented by the following formula (II):

[Formula 2]




(II)

wherein $R^{21}$ represents hydrogen atom, an alkyl group, or an alkoxy group; $R^{22}$ represents an alkyl group, or an alkoxy group; $R^{23}$ and $R^{24}$ each independently represents hydrogen atom, a halogen atom, or an alkyl group which may have a substituent; $R^{25}$, $R^{26}$, $R^{27}$, and $R^{28}$ each independently represent an alkyl group which may have a substituent; $R^{29}$ and $R^{30}$ each independently represent hydrogen atom, a halogen atom, or an alkyl group which may have a substituent; in one or more combinations selected from the group consisting of combinations of $R^{23}$ and $R^{27}$, $R^{28}$ and $R^{29}$, $R^{24}$ and $R^{25}$, and $R^{26}$ and $R^{30}$, two of the groups included in each combination (wherein these groups are alkyl groups which may have a substituent) may combine to each other to form a 5- or 6-membered ring; and $M^-$ represents a counter ion.